

What is claimed is:

1. A method for increasing the burn rate of a gas generant formulation, the method comprising:

adding a quantity of at least one metal aminotetrazole hydroxide to the gas generant formulation.

2. The method of claim 1 wherein after the addition, the at least one metal aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 1 wt.%.

3. The method of claim 1 wherein after the addition, the at least one metal aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 5 wt.%.

4. The method of claim 1 wherein after the addition, the at least one metal aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 10 wt.%.

5. The method of claim 4 wherein after the addition, the at least one metal aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of no more than about 25 wt.%.

6. The method of claim 1 wherein the added metal aminotetrazole hydroxide is selected from the group consisting of copper aminotetrazole hydroxide, zinc aminotetrazole hydroxide and combinations thereof.

7. The method of claim 1 wherein the added metal aminotetrazole hydroxide is copper aminotetrazole hydroxide.

8. The method of claim 7 wherein after the addition, the copper aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 1 wt.%.

9. The method of claim 7 wherein after the addition, the copper aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 5 wt.%.

10. The method of claim 7 wherein after the addition, the copper aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 10 wt.%.

11. The method of claim 7 wherein after the addition, the copper aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 10 wt.% and no more than about 25 wt.%.

12. The method of claim 7 wherein the copper aminotetrazole hydroxide has an empirical formula of Cu(CH₂N₅)OH.

13. The method of claim 7 wherein the copper aminotetrazole hydroxide is formed by reacting Cu(OH)₂ with 5-aminotetrazole.

14. The method of claim 1 wherein the gas generant formulation contains copper bis-guanyl urea dinitrate as a primary fuel.

15. The method of claim 14 wherein the gas generant formulation contains ammonium nitrate as a primary oxidizer.

16. The method of claim of claim 1 wherein the gas generant formulation contains guanidine nitrate as a primary fuel.

17. The method of claim of claim 16 wherein the gas generant formulation contains basic copper nitrate as a primary oxidizer.

18. The method of claim of claim 1 wherein the gas generant formulation contains a primary oxidizer selected from the group consisting of ammonium nitrate, basic copper nitrate, copper diammine dinitrate and mixtures of ammonium nitrate and copper diammine dinitrate.

19. A method for increasing the burn rate of a gas generant formulation, the method comprising:

including a quantity of at least about 1 composition weight percent of copper aminotetrazole hydroxide having an empirical formula of Cu(CH₂N₅)OH in the gas generant formulation.

20. The method of claim 19 wherein the copper aminotetrazole hydroxide is included in the gas generant formulation in a quantity of at least about 5 composition weight percent.

21. The method of claim 19 wherein the copper aminotetrazole hydroxide is included in the gas generant formulation in a quantity of at least about 10 composition weight percent.

22. The method of claim 21 wherein the copper aminotetrazole hydroxide is included in the gas generant formulation in a quantity of no more than about 25 composition weight percent.

23. The method of claim 19 wherein the copper aminotetrazole hydroxide is formed by reacting Cu(OH)₂ with 5-aminotetrazole.

24. The method of claim of claim 19 wherein the gas generant formulation contains copper bis-guanyl urea dinitrate as a primary fuel.

25. The method of claim of claim 24 wherein the gas generant formulation contains ammonium nitrate as a primary oxidizer.

26. The method of claim of claim 19 wherein the gas generant formulation contains guanidine nitrate as a primary fuel.

27. The method of claim of claim 26 wherein the gas generant formulation contains basic copper nitrate as a primary oxidizer.

28. The method of claim of claim 19 wherein the gas generant formulation contains a primary oxidizer selected from the group consisting of ammonium nitrate, basic copper nitrate, copper diammine dinitrate and mixtures of ammonium nitrate and copper diammine dinitrate.

29. A gas generant formulation comprising:
a primary fuel component selected from the group consisting of copper bis-guanyl urea dinitrate, guanidine nitrate and mixtures thereof;
a primary oxidizer component selected from the group consisting of ammonium nitrate, basic copper nitrate, copper diammine dinitrate and mixtures of ammonium nitrate and copper diammine dinitrate; and
at least one metal aminotetrazole hydroxide effective to enhance the burn rate of the gas generant formulation as compared to the same gas generant formulation without inclusion of the at least one metal aminotetrazole hydroxide.

30. The gas generant formulation of claim 29 wherein the at least one metal aminotetrazole hydroxide is copper aminotetrazole hydroxide.

31. The gas generant formulation of claim 30 wherein the primary fuel is guanidine nitrate and the primary oxidizer is basic copper nitrate.

32. The gas generant formulation of claim 30 wherein the primary fuel is copper bis-guanyl urea dinitrate and the primary oxidizer is ammonium nitrate.

33. The gas generant formulation of claim 29 wherein the at least one metal aminotetrazole hydroxide is present in the gas generant formulation in a relative amount of at least about 1 wt.%.